

IV. Remarks

A. Claim Amendment

Applicant has amended claims 1 (independent), 4 (dependent); 7 (independent), 9 (dependent); 10 (independent); 13 (independent); 15 (independent); 19 (independent), and 21 (dependent). No new matter is presented by the amendment.

B. The Amended Claims Clearly Distinguish the Applied Art

Independent claims 1, 7, and 9 set forth the following features not disclosed by the prior art, alone or in combination:

- (1) **detector for detecting activation of the pressure relief device**
- (2) a **responsive device** responsive to the detector that is (a) an “output device operatively coupled to said detector” for “providing . . . **indicia that the pressure relief device is activated**” (claims 1 and 19) or (b) means for “interrupting or reducing water intake . . . **when the pressure relief device is activated**” (claim 7).

1. Rejected Claims [§ 103(a) based on Moody + Fritz]

The Examiner has rejected claims 1-9 and 19-23 under 35 U.S.C. § 103(a) based on U.S. Pat. No. 4,805,662 (“Moody”) in view of U.S. Pat. No. 6,318,403 (“Fritz”). Moody and Fritz, alone or in combination, fail to teach or suggest the above features.

Independent Claims 1, 7, and 19

Moody teaches a hot water heater leakage protection device where once water in the leakage collector pan 26 reaches a certain fullness level, a circuit 20 is triggered to cut off water intake 18 and trigger an alarm 48. See Moody, Figure 1 & 2. Moody is solely

concerned with addressing leakage so that the leakage pan 28 does not overflow. Moody is unconcerned with the pressure relief device.

Feature (1): Turning to the claim features, Moody clearly does not teach a **detector** for **detecting activation of the pressure relief device**. There is no suggestion of such a detector in Moody. As can be seen in Moody's Figures 1 & 2, the pressure relief valve 16 is not coupled to any detector for detecting **when the pressure relief valve is activated**.

Feature (2): Moreover (and as recognized by the Examiner), Moody does not teach a responsive device that is an output (audio or visual) device for providing indicia **"that the pressure relief device is activated,"** or a means for interrupting/reducing water intake **"when the pressure relief device is activated."** Moody's alarm and water cut-off devices are activated in response to leakage in the collector pan. Moody does not remotely suggest any response to activation of the pressure relief device.

The Examiner refers to Fritz to solve the deficiencies of Moody. However, the combination does not render the invention unpatentable for three reasons (1) the combination, even if workable, fails to include all claim elements, (2) the combination is unworkable/inoperative for the intended purpose, and (3) there is no motivation for the combination.

Reason (1): The Examiner indicates that Fritz's integration of the pressure relief line and the leakage line could be applied to Moody. The result would be to place the pressure relief line 15 in line with the drain line 25 just before the leakage collector 26. The Examiner asserts this would provide an alarm for both pressure relief and leakage conditions. However, this configuration still fails to provide feature (1) of a **detector** for

detecting activation of the pressure relief device. In the configuration offered by the Examiner, Moody's leakage collector 26 device would be triggered by the water in the collector reaching some fullness level--it would not be detecting the **activation of the pressure relief device**. In fact, in many cases, Moody's leakage collector 26 device would be triggered merely by leakage--not by activation of the pressure relief device--so that Moody's leakage collector 26 would not correspond to the claimed "detector for detecting activation of the pressure relief device." Applicant's invention has the beneficial feature of having a detector that specifically monitors (directly or indirectly) the state of the pressure relief device. The proposed configuration of Moody/Fritz fails to teach or suggest this feature.

Similarly, the proposed configuration fails to teach feature (2) of a responsive device **responsive to the pressure relief device being activated**. The Moody/Fritz configuration would be responsive to a fullness level being reached in the collector, not to the pressure relief device being activated.

Reason (2): The Moody/Fritz combination is unworkable/inoperative. If the pressure relief line is placed in line with the leaking line feeding the leakage collector 26, the result would be completely unworkable. It is well known that when activated due to high temperature/pressure, a pressure relief device may allow a significant volume of water to escape the tank at high pressure. That is why the pressure relief line usually is routed to a safe disposal area outside the building. If the pressure relief line is routed to Moody's collector 26, as urged, it is likely that the collector would quickly overflow, leading to significant property damage. Additionally, the water is likely to be of a very high

temperature (or could be steam), meaning that there could be significant risk of bodily harm to residents. And further, because much of the content of the tank being allowed to escape during pressure relief conditions may be in the form of steam, Moody's collector water-level-measuring mechanism likely would not work because it could not detect steam--it only detects water levels. Therefore, in the most extreme overpressure/overtemperature scenario, where what is being routed from the pressure relief line is steam, the Moody/Fritz configuration would not work at all.

Reason (3): there is no motivation for the combination. There is simply no motivation for modifying Moody as urged. Moody is concerned with overflow in the collector from leakage, not with operation of the pressure relief device, so there would be no motivation for reconstructing Moody to address pressure relief. Moreover, Moody would actually teach away from the proposed modification because the skilled artisan would be loathe to feed the pressure relief line into a finite-volume collector 26 for the safety/efficiency reasons discussed above.

Dependent Claims 2-6, 8-9, and 20-25

These claims are all patentable for at least the reasons set forth above.

2. Rejected Claims [§ 103(a) based on Moody + Fritz + Fulton]

The Examiner has rejected the remaining claims 10-18 and 24-25 by further modifying the Moody/Fritz combination with U.S. Pat. No. 3,154,248 (Fulton). Fulton does not cure the deficiencies of the Moody/Fritz combination as explained below.

Fulton discloses a sequenced protection system with two sequenced, layers of protection. If an overtemperature condition arises, Fulton's safety unit 21 can activate the

pressure relief valve 12 to release water/steam. If the overtemperature condition persists or worsens, a control switch 12 opens to cut off heating power. Thus, the sequence in Fulton (which can be in reverse order) is:

- (1) activate pressure relief valve;
- (2) does overtemperature condition persist despite activation of pressure relief valve (yes/no)?
- (3) if yes, activate control switch to cut off power.

Fulton does not teach the claimed interruption/reduction of power to the hot water heater “**when the pressure relief device is activated.**” Rather, Fulton teaches that the power is cut off only after an overtemperature conditions persists after activation of the pressure relief valve. In Fulton, the heater may be cut off well after the pressure relief value is activated, or the heater may never be cut off even though the pressure relief valve is activated. Therefore, Fulton clearly does not teach power interruption based on the pressure relief device being activated, as set forth in independent claims 10, 13, 15, and dependent claim 24.

Also, claim 12 provides that the means for interrupting/reducing comprises a **variable resistance device**. Fulton teaches a standard open/close control switch 13, not a variable resistance device.


The remaining dependent claims are patentable for at least the reasons set forth above.

V. Conclusion

Applicant respectfully submits that the application is in condition for allowance and respectfully requests a notice of allowance for the pending claims. Should the Examiner determine that any further action is necessary to place this application in condition for allowance, the Examiner is kindly requested and encouraged to telephone Applicant's undersigned representative at the number listed below.

This response to the Office Action is being filed before the expiration of three (3) months from the date of the Office Action. Therefore, it is believed that no extension fees are required. A check for the new claims is enclosed. If any additional fees are deemed necessary, Applicant hereby provides authorization to charge such fees against deposit account 50-0206. If any refunds are due, Applicant hereby provides authorization to credit such refunds against the deposit account.

Respectfully submitted,



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